PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Process for Obtaining, on the same Support, Different Pictures Rendered Alternately Visible by a Modification of the Lighting.

I, NADINE DE BOUDKOWSKY (*née* de Kibaltchitch), of 60, Quai Carnot, St. Cloud (Seine), in the Republic of France, a citizen of the Republic of Poland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to methods of and devices for producing scenic and like effects.

Heretofore by colouring surfaces, objects or persons and then illuminating the surface, object or person with a so-called "complementary" colour, the subject on the surface, the shape of the object, or even the position of the person is made to appear changed.

The basic principle of this method is that the illumination of an object colour by a light of "complementary" colour kills the refractive qualities of that colour, which then appears black.

In order that the description herein may be clear and distinct I will refer to the colours used on the scenic surface, object or person as the object colour so as to distinguish the term from its use, when referring to the illuminating rays.

This earlier method of producing illusory effects was then adapted with objects arranged on or in front of a black background, usually velvet, so that by illuminating the object as already stated, the object was not discernible from its background. A development of this method of producing scenic effects is to drape an object or person in parti-coloured clothing and then to alternately illuminate the object or person with colours "complementary" to those used in the clothing. Then by changing the light rays from one to another colour, the dress or draping of the person or object appears to have been changed and in fact, the person in successive illuminations may appear to be dressed in several distinct dresses.

Such a method of producing illusory effects has also been used as a means of producing advertising signs or toys.

Now the object of the present invention is to provide an improved method of and devices for producing these illusory effects.

The invention consists in a method of producing scenic or like effects which consists in superposing on a surface a series of colour schemes or pictures and illuminating the covered surface with light rays adapted to neutralize some or all of the colours, so that normally covered coloured areas become visible through or independently of the superposed layer or layers, as hereinafter set forth.

Further, the invention consists in a scenic device for producing illusory effects.

The present invention is distinct from the known method of obtaining the hereinbefore mentioned scenic effects in that I am not bound to use illuminating rays of a colour "complementary" to the object colour, and that instead of the object surface being merely parti-coloured, I use superposed coloured surfaces.

Now each projected coloured light ray neutralizes a certain number of colours whilst decolouring object colours to nearly pure white, rendering all the object colours similar one to another and obtaining therefrom a very light tint, corre-

[*Price* 1/-]

sponding to the colour of the light ray used, for example, the apparent object colour will be a very pale blue when a blue ray illuminates the decolourised actual object colours.

As a further example; the apparent colour of the object is rose-orange when a red illuminating ray is used.

Now certain coloured illuminating rays neutralize only one colour, others two, and others, for instance, blue and red neutralize a whole series of colours, and that is why I employ blue and red rays in preference to others, and being prefer ential illuminating rays, I have chosen them as a means of setting out an example of my improved method of obtaining scenic effects now to be described:

It is supposed that the picture is one to be shown on a theatrical back cloth, the aspect of which is modified by changing over from blue light to red light, or *vice versa*.

I commence by drawing and painting on the back cloth the design which is to be viewed by the blue light. Among the numerous colours which are capable of being employed for the execution of the first design, may be mentioned cobalt, ultramarine blue, emerald green, and veronese green. When the first design so drawn is dry, I superpose in paint the second design, which is to be visible by red light. Among the colours employed for this work may be cited, crimson lake, vermilion, violet lake, cadmium yellow and red ochre.

It must be quite understood that the object colours above mentioned, both for blue light and red light, may be replaced by others, but it is always necessary to employ substantially pure colours and not mixed colours, although colours mixed with white may be used, which mixing merely results in obtaining different values of the same colour.

The work may be carried out with oil paints, distemper, water colours, and even in pastel.

The back cloth thus prepared will show the second design when illuminated by a red light. By changing the colour of the light and employing the blue colour, the first design will appear normally at the places where it is not covered by the second design, and at the places where it is covered it will appear also, by the sole fact that under this blue light the colours of the second design mingle with those of the first one, or in other words the colours of the second design are neutralized and disappear into one blue surface so as to allow the first colours with which they mingle to appear as a different design and in general the colours are neutralized into the colour corresponding to the illuminating rays—blue, red, orange, violet, *etc.*

It must be quite understood that the same process may be so carried out that there may be upon the same support three or even a greater number of pictures capable of being seen successively by suitably modifying the colour of the lighting.

It may be here mentioned:—

(1) That the blue light neutralizes the greatest number of colours, including all the tints of blue (blue green, blue-violet *etc.*) clear green, rose, clear yellow and violet.

(2) That the red light neutralizes, while decolourising the object colour, all the tints of rose amaranth, flesh rose, deep yellow, orange and brown.

(3) That other coloured lights neutralize each one colour.

(4) That violet has further the quality of changing into flesh red.

(5) That all lights change the colours that they do not neutralize, but with less intensity than violet.

A simple example of my invention will now be described with reference to the accompanying diagrammatic drawing. In this figure a leaf of yellow colour is indicated by the reference 1, which leaf is partly covered by crossed boughs 2 and 3, 2 being of pink colour and 3 coloured violet. By changing the colour of the illuminating rays the following results will be obtained.

(1) First change—in white light the three objects are seen.

(2) Second change—in red light, yellow and pink disappear—and only one branch is seen, *viz.*:—3 (violet).

(3) Third change—in blue light, yellow, pink and violet disappear and only a smooth blue surface is seen.

(4) Fourth change—in violet light the two branches disappear, and only the leaf which is of a bright orange colour is seen.

The parts of the branches which are painted over the yellow leaf are of a different colour than the parts which are near it, the colour of the rest of the branch depends on the colour which is round the leaf. The parts where the two branches meet one over the other is also of a slightly different colour or shade of the same colour.

It is in virtue of this new principle of superposing coloured designs that a first design or picture, perhaps rendered invisible under one light is rendered visible by another coloured light. In

practise, I have actually constructed a picture representing a gobelin tapestry with a figure in rose colour in the corner, which is visible only in the red light. The same decoration when illuminated with a white light represents a strongly coloured landscape with the same figure visible as a white statue, while viewed in a blue light, the statue is not visible, and in the place of the landscape seven nymphs appear.

My improved method is not affected by the opacity of colours and that I can use any colours for illuminating purposes and can change quite readily the colour of the illuminating rays from red to blue, red to white, blue to white, yellow to red, violet to blue, violet to red, *etc.*, to obtain an efficient and pleasing result.

In principle, I decolourise and transform the colours masking a design, into a coloured light corresponding to the illuminating ray, so that the picture which was under the masking colours appears clear and visible.

The technique is the same whatever the number of superposed layers, and if the designs are well executed they can be superposed without injury to one another; the supporting surface or costume for the design being similar to one another in the white light, change their aspect completely in successive coloured lights by neutralization.

In contradistinction to the known method of obtaining illusory effects by changing the colour of the illuminating rays, I need not use a black background, as I am not necessarily changing the object colours to black, which is the only result of the use of illuminating rays having a colour "complementary" to the object colours.

I prefer to use very vivid colours, all the changes giving a coloured image, and a black image is only used exceptionally as an incidental aid.

The first picture or any of the superposed pictures may be rendered visible at will, or all the pictures successively rendered visible by selecting in predetermined order the colours of the illuminating rays as they are successively used.

Any known means of obtaining the required coloured rays can be obtained by projecting a white light through filters or coloured screens so as to obtain the coloured rays.

The application of my improved method gives unlimited possibilities for the decoration of theatres, paint papers, glassware, and in general, paintings executed on transparent objects. The decoration may apparently be changed and can be produced by light projected from the front or rear of the object.

Further, the invention can be applied on carpet fabrics and on pottery.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of producing scenic or like effects which consists in superposing on a surface a series of colour schemes or pictures and illuminating the covered surface with light rays adapted to neutralize some or all of the colours, so that normally covered coloured areas become visible through or independently of the superposed layer or layers, substantially as set forth.

2. The method of rendering visible covered colour schemes in which illuminating rays are utilised to transform the covering scheme into a corresponding coloured light, so that the covered scheme becomes visible, substantially as set forth.

3. A method of producing scenic effects which consists in painting on the same support several subjects which may be made to appear successively according to the colour of the lighting used for illumination, consisting for example, in the case of the alternate use of the colours blue and red for the lighting, in drawing the design visible by blue light, then over it the design visible by red light, the pure colours, which may be oil colours, or water colours, or distemper, or pastel, being preferably cobalt, ultramarine blue, emerald green, veronese green, for the design corresponding to the blue light, and crimson lake, vermilion, violet lake, cadmium yellow and red ochre for the design corresponding to the red light.

4. The method for obtaining, on the same support, different pictures rendered alternately visible by a modification of the lighting, substantially as described.

5. A scenic or like effect having superposed coloured schemes adapted to be rendered visible at will, substantially as set forth.

Dated this 29th day of August, 1921.

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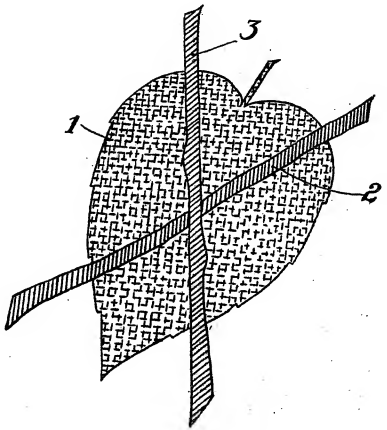
Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1922.

[This Drawing is a full-size reproduction of the Original.]



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